

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A method of fabricating a ~~low temperature polysilicon (LTPS)~~ thin film transistor (TFT), the method comprising following steps:

10 providing a substrate;
forming a polysilicon film on the substrate, the polysilicon film defined with a source region, a drain region, and a channel region between the source region and the drain region;
forming a gate insulating layer ~~on—above~~ the substrate;
15 forming a gate ~~on—above~~ the substrate;
performing an ion implantation process to form a source in the source region and a drain in the drain region;
forming a silane based silicon nitride layer covering the gate and the polysilicon film; and
20 forming a TEOS based silicon oxide layer on the silicon nitride layer.

Claim 2 (currently amended): The method of claim 1 further comprising following steps:

25 performing a photo-etching process to form a contact hole on the source and ~~another contact hole on the drain respectively;~~ and
filling a conductive layer in the contact holes, the conductive layer being electrically
30 connected to the source and the drain.

Claim 3 (original): The method of claim 1 wherein the

method of forming the polysilicon film comprises following steps:

forming an amorphous silicon film on the substrate;
and

5 performing an excimer laser annealing process to make the amorphous silicon film crystallize to the polysilicon film.

Claim 4 (cancelled)

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Claim 5 (original): The method of claim 4 wherein the silicon nitride layer comprises 20% to 40% hydrogen atoms and serves as a hydrogen source of a hydrogenating process.

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Claim 6 (original): The method of claim 1 wherein the gate is a metal gate.

20 Claim 7 (currently amended): The method of claim 1 wherein the silicon oxide has a thickness in a range of 2500500 to 10000 angstroms.

25 Claim 8 (currently amended): The method of claim 1 wherein the silicon nitride has a thickness in a range of 500 to 35005000 angstroms.

30 Claim 9 (original): The method of claim 1 wherein the method forms the silicon nitride layer by performing a first plasma enhanced chemical vapor deposition (PECVD) process.

Claim 10 (original): The method of claim 9 wherein the

method forms the silicon oxide layer by performing a second plasma enhanced chemical vapor deposition process.

5 Claim 11 (currently amended): The method of claim 10 wherein the first PECVD process and the second PECVD process are performed in the same ~~reacting~~-chamber.

10 Claim 12 (currently amended): The method of claim 10 wherein the first PECVD process and the second PECVD process are performed in different ~~reacting~~-chambers.

15 Claim 13 (original): The method of claim 1 wherein the low temperature polysilicon thin film transistor is a top gate low temperature polysilicon thin film transistor or a bottom gate low temperature polysilicon thin film transistor.